AMENDMENTS TO THE CLAIMS

Claims 1-30 (Canceled).

31. (Currently amended) A method of operating ~~a plurality of~~ pixels in an array of an ~~image sensor~~ imaging device comprising:

opening a mechanical shutter;

~~globally~~ simultaneously resetting all the pixels of the array to begin a first integration period;

accumulating charge in at least one photoconversion device of each pixel;

closing [[said]]the shutter to end [[said]]the first integration period;

resetting a charge collection region of each of the pixels to obtain a respective reset voltage for each pixel and reading out [[said]]the reset voltage;

transferring accumulated charge from each photoconversion device to an associated charge collection region of each pixel; and

reading out the charge residing in each charge collection region to obtain a respective signal voltage for each pixel.

32. (Currently amended) The method of claim 31, wherein the reset and signal voltages of [[said]]the pixels are readout on a row by row basis after the mechanical shutter is closed and the first integration period ends.

33. (Currently amended) The method of claim 31, wherein ~~said global reset~~ the act of simultaneously resetting all the pixels of the array is conducted by turning on a reset transistor and a transfer transistor within each pixel to couple the photoconversion device of each pixel to a voltage source.

34. (Currently amended) The method of claim 33, wherein [[said]]the reset transistor and [[said]]the transfer transistor are turned on simultaneously to begin [[said]]the first integration period.

35. (Currently amended) The method of claim 31, wherein ~~said global reset~~ the act of simultaneously resetting all the pixels of the array is conducted by turning on a reset transistor in each pixel for resetting a photoconversion device.

36. (Currently amended) The method of claim 31, wherein [[said]]the image sensor is a CMOS image sensor.

37. (Currently amended) The method of claim 31, wherein [[said]]the charge collection region is a floating diffusion region.

38. (Currently amended) The method of claim 37, wherein [[said]]the act of reading out the reset voltage comprises reading out the reset voltage from [[said]]the floating diffusion region.

39. (Currently amended) The method of claim 31, wherein [[said]]each pixel comprises four transistors.

40. (Withdrawn and currently amended) The method of claim 31, wherein [[said]]each pixel comprises five transistors.

41. (Currently amended) ~~A pixel sensor cell~~ An imaging device comprising:

an array of pixels, each pixel comprising:

a photoconversion device for accumulating charge[[;]].

a first reset transistor ~~and a transfer transistor~~ for resetting [[said]]the photoconversion device ~~to begin an integration period~~;

~~a mechanical shutter, wherein said mechanical shutter is open during the resetting of said photoconversion device and closed to end said integration period;~~

a charge collection region for receiving said charge from said photoconversion device[[;]],

a transfer transistor for transferring charge from the photoconversion device to the charge collection region[[;]], and

a readout circuit for reading out said charge from said charge collection region;

a mechanical shutter; and

a timing and control circuit configured to open the mechanical shutter, simultaneously operate each first reset transistor to reset the photoconversion devices in all pixels of the array to begin an integration period, and close the mechanical shutter to end said integration period.

42. (Currently amended) The ~~pixel sensor cell~~ imaging device of claim 41, ~~wherein said photoconversion device is coupled to a voltage source~~ further comprising a second reset transistor coupled to the charge collection region for resetting the charge collection region, wherein the first reset transistor is coupled directly to the photoconversion device.

43. (Currently amended) The ~~pixel sensor cell~~ imaging device of claim 42, wherein ~~said photoconversion device is coupled to a voltage source through a reset transistor~~ the timing and control circuit is further configured to simultaneously operate each transfer transistor with each first reset transistor to reset the photoconversion devices in all pixels of the array.

44-45. (Canceled).

46. (Currently amended) The ~~pixel sensor cell~~ imaging device of claim 41, wherein the timing and control circuit is further configured to cause a reset voltage ~~is~~ from each pixel to be readout in a row by row manner after said shutter is closed.

47. (Currently amended) The ~~pixel sensor cell~~ imaging device of claim 46, wherein the timing and control circuit is further configured to cause a signal voltage ~~is~~ from each pixel to be readout in a row by row manner after said reset voltage is readout.

48. (Currently amended) The ~~pixel sensor cell~~ imaging device of claim 41, wherein ~~said~~ each ~~pixel sensor cell~~ pixel comprises four transistors.

49-59. (Canceled).

60. (Currently amended) A timing control circuit for an imager array comprising:

circuitry for applying a first driving voltage to simultaneously operate at least one transistor of ~~a pixel sensor cell~~ all pixels of the array~~, wherein said transistor resets at least one~~ to reset a photoconversion device of each respective pixel to a predetermined voltage to begin an integration period during which each photoconversion device collects charge in response to incident light;

circuitry for closing a mechanical shutter ~~for ending said~~ to end the integration period; and

~~a readout circuit, wherein said readout circuit uses a rolling readout technique after said integration period ends~~ circuitry for causing the charge to be read out from each photoconversion device of each pixel in a row by row manner.

61. (Currently amended) The circuit of claim 60, wherein the circuitry for applying the first driving voltage applies the driving voltage to ~~said pixel sensor cell further comprises~~ a reset transistor ~~for resetting a charge collection region~~ and a transfer transistor ~~for transferring charge to said charge collection region after said integration period~~ of each pixel of the array.

62-64. (Canceled).

65. (Withdrawn and currently amended) The circuit of claim 64, wherein ~~said photoconversion device is coupled to said voltage source directly by said reset transistor~~ the circuitry for applying the first driving voltage applies the driving voltage to a first reset transistor of each pixel of the array, each respective first reset transistor being coupled directly to a respective photoconversion device.

66-67. (Canceled).

68. (Withdrawn and currently amended) The circuit of claim [[67]]65, ~~wherein said five transistor circuit comprises at least two reset transistors, one for resetting said photoconversion device and one for resetting said charge collection region, at least one transfer transistor, at least one row select transistor and at least one source follower transistor~~ further comprising circuitry for, subsequent to closing the mechanical shutter, applying a second driving voltage to respective second reset transistors of all pixels of the array to reset a charge collection region of each respective pixel to a predetermined voltage.

69-83.

84. (Currently amended) An imager device comprising:

a pixel array comprising:

a plurality of pixels;

readout circuitry for [[said]]the array;

global circuitry for simultaneously resetting a photoconversion ~~devices~~ device of [[said]]each pixel of the array to begin an integration period; and

a mechanical shutter for ending [[said]]the integration period when the mechanical shutter is moved from an open position to a closed position.

85. (Currently amended) The device of claim 84, wherein [[said]]the readout circuitry is configured to read out the pixels ~~are readout~~ on a row by row basis after the mechanical shutter is closed and the first integration period ends.

86. (Currently amended) The device of claim 84, wherein [[said]]the global reset circuitry is ~~conducted by~~ configured to simultaneously ~~turning~~ turn on a reset transistor and a transfer transistor within each pixel to couple the photoconversion device of each pixel to a voltage source.

87. (Canceled).

88. (Currently amended) The device of claim 84, wherein [[said]]the readout circuitry comprises circuitry for reading out reset voltages and output voltages for [[said]]the plurality of pixels.

89. (Currently amended) The device of claim 84, wherein [[said]]the global circuitry for resetting said photoconversion devices comprises circuitry for coupling [[said]]the photoconversion device to a voltage source.

90. (Currently amended) The device of claim 89, wherein [[said]]the photoconversion device is coupled to a voltage source through a reset transistor.

91. (Withdrawn and currently amended and currently amended)The device of claim 90, wherein [[said]]the photoconversion device is coupled to [[said]]the voltage source directly by [[said]]the reset transistor.

92. (Currently amended) The device of claim 90, wherein [[said]]the photoconversion device is coupled to [[said]]the voltage source through [[said]]the reset transistor and a transfer transistor which transfers accumulated charge from [[said]]the photoconversion device.

93-106. (Canceled).

107. (New) A method of operating an imaging device comprising:

opening a mechanical shutter;

simultaneously resetting all pixels of an array to begin a first integration period;

accumulating charge in at least one photoconversion device of each pixel;

closing the shutter to end the first integration period.

108. (New) The method of claim 108, wherein the signal voltages of the pixels are readout on a row by row basis after the mechanical shutter is closed and the first integration period ends.

109. (New) The method of claim 107, further comprising transferring accumulated charge from each photoconversion device to an associated charge collection region of each pixel by operating a transfer transistor of each pixel.

110. (New) The method of claim 109, further comprising reading out the charge residing in each charge collection region to obtain a respective signal voltage for each pixel.

111. (New) The method of claim 110, wherein the charge collection region is a floating diffusion region.

112. (New) The method of claim 107, further comprising:

subsequent to closing the shutter, operating a first reset transistor of each pixel to reset a charge collection region of each of the pixels to obtain a respective reset voltage for each pixel and reading out the reset voltage, wherein the act of simultaneously resetting all pixels comprises operating a second reset transistor of each pixel.

113. (New) The method of claim 112, wherein the act of reading out the reset voltage comprises reading out the reset voltage from the floating diffusion region.

114. (New) The method of claim 107, wherein the act of simultaneously resetting all the pixels of the array is conducted by turning on a reset transistor and a transfer transistor within each pixel to couple the photoconversion device of each pixel to a voltage source.

115. (New) The method of claim 107, wherein each pixel comprises four transistors.

116. (New) The method of claim 112, wherein each pixel comprises five transistors.

117. (New) The method of claim 31, wherein transferring accumulated charge from each photoconversion device to an associated charge collection region of each pixel comprises operating a transfer transistor associated with each photoconversion device of each pixel.